On some Acridioidea from Puerto Bertoni, Paraguay.

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The following named locusts were submitted to the writer recently for determination. They were taken by Arnold de Winkelried Bertoni, of Puerto Bertoni, Paraguay. Although the collection is a comparatively small one, it is nevertheless of more than usual interest since it contains at least three apparently new species. In it are also represented two or three other forms of more than ordinary interest.

Orphula pagana Stal.

This species is represented by both sexes (♂, No. 710 and ♀, No. 717). They are of the normal size and color.

Orphula gracilicornis n. sp.

A moderately robust, medium sized, variably colored insect with long, slender and but little flattened antennae and in which the wings are more or less smoky with all the veins bright ochraceous.

Head large, a trifle wider than the front edge of the pronotum, shorter than the latter, the occiput and vertex ascendent, the latter in front of the eyes about as wide as long (♀) or a little longer than wide (♂), more or less acuminate in front, the lateral walls sharp and bordered internally by a deep groove. Eyes fairly prominent, more or less acuminate above, with their anterior edge almost straight, about as long as that portion of the cheek below them, separated above by a space fully twice as great as the width of the frontal costa between the antennae. The latter 18 or 19 jointed, rather elongate, in the female about equalling the combined length of the head and the pronotum, in the male almost a half longer or nearly as long as the hind femora, the joints of the basal half flattened, of the outer half cylindrical, in nowise ensiform as in the typical species of the genus. Frontal costa prominent, a little expanding from the ocellus downward and a very little contracting just above, quite deeply sulcate throughout in the ♀, but in the ♂ sometimes nearly plane between the antennae. Pronotum a very little expanding posteriorly, the lateral carinae fully as prominent as the median and parallel to the last transverse sulci, beyond this point more widely separated, a little less prominent and plainly divergent to the hind margin; hind edge of disk obtusangulate, the surface of the hind lobe both on the disk and

sides rather finely granulose and more or less punctulate, the anterior lobe comparatively smooth. Tegmina and wings about equalling (♀) or a little surpassing (♂) the apex of the abdomen; the former coreaceous and irregularly and closely veined on basal half, the apical portion somewhat membranous and more evenly and sparsely veined, their apex obliquely truncate; the latter moderately narrow, in the males provided with a prominent vitreous fenestrate area crossed by about 10 nearly parallel nervures. Hind femora about normal, in the male extending beyond the tip of the abdomen by the length of the geniculae, in the female just about or not quite reaching the apex of the abdomen. Hind tibiae with 11-12 spines on both the outer and inner edges. Lobes of the mesosternum separated by a space very slightly transverse, their inner edges rounded and gently divergent posteriorly.

Color above varying from plain grass-green on vertex, top of head, disk of pronotum and dorsal portion of tegmina to dark brown with still darker fleckings on the latter; sides of head, pronotum, pleura and discal and costal fields of tegmina varying from castaneous to dark brown; face and legs together with abdomen and venter varying from dull ochreous to dirty testaceous or even pale brown, on the hind femora the upper carinæ marked with fuscous or black, the knees dusky, the hind tibiæ strongly infuscated with pale black-tipped spines. Antennæ testaceous basally, infuscated apically. Upper edge of sides of pronotum lined with deep black, the line crossing over to the outer edges of disk on the hind lobe.

Length of body, ♂, 17 mm., ♀, 24 mm. of pronotum, ♂, 3.4 mm., ♀, 5 mm.; of tegmina, ♂, 14 mm.; ♀, 17 mm.; of hind femora, ♂, 11 mm., ♀, 14.5 mm.

Habitat.—Two males (No. 709) and three females (Nos. 718, 707), Puerto Bertoni, Paraguay, where they were taken during the month of January. A. de Winkelried Bertoni collector.

Orphulella punctata De Geer.

This very widely distributed and variable tropical American locust is represented by several specimens embracing both sexes (Nos. 708, 711, 713 and 727).

Ommexecha virens Serville.

The collection contains a single female specimen of a species of *Ommexecha* that I have no hesitancy in referring to Serville's *virens*. It is very similar in form to the next spe-

cies, but has narrower and more pointed tegmina, and in addition appears less rugose of pronotum. It bore no number.

Ommexecha servillei Blanchard.

This insect is represented by both sexes which are numbered 394. They are typical.

Amblytropidia robusta Bruner.

A single female specimen of this species is at hand. It is of a uniformly dark color and bears the number 728.

Elaeochlora viridicata (Serville).

A single male specimen bearing the number 399 is referred here.

Diponthus crassus n. sp.

A comparatively small, but very robust species without banded hind femora in which the base and disk of the wings are flavous or hyaline instead of red or roseate.

Head short and deeply set into the anterior edge of the pronotum, about as wide as high; the vertex broad, nearly as wide as the shortest diameter of one of the eyes, the fastigium depressed, widely and shallowly sulcate, the surface sparsely punctate; frontal costa gradually merged into the vertex and at its upper extremity nearly as wide, gradually narrowing below, deeply sulcate at ocellus and below, nearly plane above but provided with a few scattered punctures. Antennæ with the segments flattened or compressed nearly or quite one-half longer than the combined length of the head and pronotum 22-jointed. Pronotum expanding but little posteriorly, the anterior lobe coarsely and the hind one densely and deeply punctulate, the two lobes about equal in length, the transverse sulci, especially the hind ones, profound; anterior edge roundly emarginate at middle, the hind margin of disk widely and roundly angulate, Tegmina and wings somewhat abbreviated, not quite reaching the apex of the abdomen or the tips of the hind femora, the veins and veinlets testaceous and the background dull black. Hind femora rather slender their lower sulcus inner side and outer disk together with the genicular lunules black or piceous. Hind tibiæ 9-11 spined externally and 14 spined internally, the lower and inner faces infuscated, externally and above dark vinaceous. Prosternal spine large compressed, straight, the apex rounded. Interspace between the mesosternal lobes wider than the lobes themselves.

General color dull brunneo-piceous, the frontal costa, vertex, a line on occiput and middle of pronotum to its apex testaceous; pos-

terior and anterior edges of lateral lobes of latter likewise testaceous as are also the anterior and middle legs and portion of the hind femora.

Length of body, ♀, 34 mm., of pronotum, 8 mm., of tegmina, 22 mm., of hind femora, 19 mm., of antennæ 16.5 mm.

Habitat.—The type comes from Puerto Bertoni, Paraguay, where it was taken in November, 1909, by A. de Winkelried Bertoni. It was submitted under the number 400.

This form may be separated from the previously described species by the subjoined table.

TABLE FOR DETERMINING THE SPECIES OF DIPONTHUS.

A. Tubercle of the prosternum acuminate, retroarcuate.
  b. General color green or olive; tegmina immaculate, the margins pale.
    c. Grass-green; wings greenish-hyaline. Posterior femora on outer face not dotted with black.....**electus** Serv.
    cc. Olive green; tegmina dilute fuscous; wings subhyaline, rose-color basally, the nervures brown. Posterior femora on the outer face with two bands and the condyle black or blackish; hind tibiæ with base, apex and spines black .....**dispar** Gerst.
  bb. General color ochraceous or fuscous; tegmina maculate.
    c. Wings blue, the apex bordered with brown; hind tibiæ black and yellow annulate, not black-dotted. **festivus** Gerst.
    cc. Wings rose color, tesselate with black; hind tibiæ yellow, dotted with black apex and base dusky.
clarazianus Pict. et Sauss.

AA. Tubercle of the prosternum straight, not retroarcuate.
  b. Pronotum with the pale lines percurrent, three dorsal, straight; two lateral, suboblique. Body and legs yellow, black and red; tegmina black tesselate with yellow
puelchus Pict. et Sauss.
  bb. Pronotum with the pale lines not percurrent, except the dorsal one alone in some instances.
    c. Larger (male, 40, female 51 mm.) Testaceous conspersed with black .....**nigro-conspersus** Stal.
    cc. Smaller (male, 24-29, female, 30-40 mm.) Color variable.
      d. General form very robust, the tegmina and wings not quite reaching the tip of abdomen or apex of hind femora. Wings hyaline or flavous, without a tinge of red or roseate. Hind femora not banded or fasciate
crassus N. Sp.

dd. General form only moderately robust, the tegmina and wings reaching or surpassing the tip of the abdomen or apex of hind femora. Wings with a varying portion more or less red or roseate. The hind femora fasciate.

e. Body and legs not black spotted.

f. Tegmina for the most part olivaceous or greenish, but slightly maculate with dusky ..... **permistus** Serv.

ff. Tegmina decidedly obscure maculate.

g. Anterior and middle legs not largely black; general color dull testaceous, inclining to brown.

paraguayensis Brunner.

gg. Anterior and middle legs largely black.

h. Pronotum for the most part black, the bands bright yellow, head and knees ornamented with red.

schulzi Brunner.

hh. Pronotum when black only so on the anterior lobe, the bands testaceous. Head and knees without red.

argentinus Pict. et Sauss.

ee. Body and legs conspicuously conspersed with black.

f. Body and legs strongly tinged with rufous or red. Antennæ unicolorous, black **pycnostictus** Pict. et Sauss.

ff. Body and legs along with tegmina greenish or olivaceous. Antennæ annulate with pale. .... **communis** Bruner.

Leptysma filiformis Serville.

A single male locust bearing the number 403 is referred here with some doubt, but by referring to the table for separating certain South American species of the genus (Proc. U. S. Nat. Mus., xxx, p. 658), it will be found that the specimen at hand falls in with what has been accepted as the above species.

Adimantus ornatissimus Burmeister.

A very beautifully marked female locust numbered 409 is placed as Burmeister's *Oxya ornatissimus*. It agrees well with other specimens in the writer's collection that have been called the *Acridium vitticeps* Blanchard. (See Paraguayan Locusts, Proc. U. S. Nat. Mus., xxx, p. 666).

Schistocerca paranensis (Burmeister).

A female specimen of this destructive migratory species is included without a number and indicates that Puerto Bertoni is within its range.

Schistocerca flavofasciata (De Geer).

A male specimen of this genus bearing the number 729 is referred here. It is quite normal.

Dichroplus punctulatus (Thunberg).

This insect, the most widely distributed species of the genus *Dichroplus*, is represented by a typical female specimen under the number 714.

Dichroplus bergi Stal.

There are two specimens, a pair, of a locust belonging to the genus *Dichroplus* at hand, that are referred to Stal's *D. bergi* with some doubt. They come nearest to his variety b. but are not quite typical. They are numbered ♀ 723, ♂ 726, the former collected in January, the latter during December.

Parascopas sanguineus n. sp.

Very similar to *Parascopas* (*Scopas*) *obesus* Giglio-Tos in size and general appearance, but differing from that insect in being somewhat slender and in lacking the blood-red lower sulcus and inner face of hind femora. The present species also differs from *obesus and chapadensis* Rehn, in having the entire lower surface including the meso- and metasternum together with the last ventral segment of the male abdomen rich blood-red. The hind tibiæ are also much deeper blue-green than in the other two known species. The cerci of the present species are similar to those of *obesus* but less abruptly bent upwards than there. The supra-anal plate is largely pallid not at all sulcate at middle, while the preceding segment has its marginal apophyses almost entirely obliterated, being present only as very minute tooth-like projections. The tegmina slender elongate oval, their apices reaching about to the middle of the second abdominal segment, their upper half being light olive-green, and the lower portion piceous.

Length of body, ♂, 22 mm., of pronotum, 4.6, of tegmina, 3.5 mm., of hind femora, 12 mm.

Habitat.—The single male specimen at hand, the type, comes from Puerto Bertoni, Paraguay, where it was taken during the month of January, by A. de Winkelried Bertoni. It is numbered 712.

This insect is to be recognized also by its very deeply sulcate fastigium and frontal costa and by the ferruginous antennae that become strongly infuscated apically, while the

specimens at hand of both *obesus* and *chapad* have them pallid. The annexed table will aid in separating the species of the genus.

SYNOPSIS OF THE SPECIES OF PARASCOPAS.

A. Body rather obese, the transverse sulci of the pronotum profound. Lower edge and lower half of inner face of hind femora blood-red ..... **obesus** Gig.-Tos.

AA. Body more elongate, the transverse sulci of the pronotum not profound but still well defined. Lower edge and inner face of hind femora flavous.

b. Entire under surface of body blood-red. Cerci of male with the apical two-thirds very slender, equal, directed upwards and a little to the rear; supra-anal plate scarcely sulcate and largely pallid. ..... **sanguineus** N. Sp.

bb. Entire under side flavous. Cerci of male with the apical two-thirds moderately heavy, sigmoid, flattened, the apex directed to the rear; supra-anal plate largely infuscated, deeply sulcate at middle. ..**chapadensis** Rehn.

Osmilia violacea (Thunberg).

Specimens of the genus Osmilia (No. 404) are referred to Thunberg's *violacea*. They are typical of those with bluish wings found throughout Southern Brazil, Paraguay and Northern Argentina. Whether or not they are distinct from the *coelestis* Burmeister I am not prepared to state at this time.

Rhipipteryx brullei Serville.

The collection at hand also contained two specimens of this little gryllid. It was numbered 395.

THE CLASSIFICATION OF THE MELOIDAE:—I note that Dr. Wellman, in his very interesting paper on this group, uses the subfamily name Zonitinae, proposed by Ganglbaur in 1907. The name Zonitinae has however been long in use for a subfamily of Mollusca, of which the genus *Zonites* is the type. I suggest that the Coleopterous Zonitinae be called Nemognathinae, with *Nemognatha* as the type genus. The tribe Zonitini then takes the name Nemognathini, proposed in 1862 by LeConte. With regard to the name of the family, I am altogether disposed to adhere to Meloidae, which seems to be justifiable historically and on the grounds of long usage.—T. D. A. COCKERELL, Boulder, Colorado.